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ABSTRACT

The level of economic stimulus provided to the Atlanta area by Georgia State University was examined and found to be 5,432 full-time jobs and $140.2 million in income. It is shown that the figures are conservative since spending by part-time employees and most part-time students was omitted. A calculated multiplier of 1.48 was used, and the study avoided both the oversimplification of aggregate location quotient models and the massive data requirements of input-output models. Previous impact studies are reviewed and a bibliography is included. (Author/LBH)

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GEORGIA STATE UNIVERSITY SPENDING PATTERNS AND THE ATLANTA ECONOMY 1978

Institutional Research Report No. 79-8

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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by

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Office of Institutional Planning
Georgia State University
February, 1979

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Highlights

- In the course of pursuing its primary educational and cultural aims, Georgia State University provides the Atlanta community with a substantial extra dividend of jobs and income.
- Forty-six percent of the student body lives in the Atlanta area largely because of enrollment in Georgia State.
- The average student annually spends $7,307 in the local economy.
- Faculty and staff members spend locally an average of $9,530 each.
- The University's local purchases amounted to $9,967,085 in Fiscal 1978.
- Direct spending by the university, faculty and staff, and students totaled $94,726,136. This figure is conservative since it omits spending by part-time employees and most part-time students.
- But since each dollar of direct spending turns over several times in the 15-county Atlanta metropolitan area--an effect known as a "multiplier"--the total impact of Georgia State University was calculated at $140.2 million.
- The University directly provided 2,106 full-time jobs and 1,522 part-time jobs in 1978. University-related spending generated additional full-time positions in the Atlanta community bringing the total to 5,432 jobs.
- A noteworthy feature of Georgia State University's spending is that it remains stable even through economic recession.

Georgia State University Spending Patterns

and the Atlanta Economy, 1978

The university plays many roles in the community in addition to its stated purpose. Incidental to its primary aims of educating people and pushing forward the boundaries of human knowledge, the university also broadens the local social and political environment and, simultaneously, provides the community with jobs and considerable income.

It is difficult to translate the long-run benefits of expanded cultural activity and improved human resources into concrete measures. On the other hand, it is possible to study empirically the university's immediate value to the community in terms of employment and income. In 1976, the Office of Institutional Planning conducted such a study to give interested members of the Atlanta community a clearer picture of the substantial extra dividend of jobs and income which Georgia State University provides (Salley, 1976).

Using estimating techniques developed in previous studies at other postsecondary educational institutions, the Georgia State University impact study identified and measured three channels by which university-related spending enters the Atlanta income stream. These are direct university purchases, the university payroll, and spending by the student body.

These primary channels of direct spending, although substantial, do not give a complete picture, however. Because of the interdependence of a high-consumption mass-production economy, these initial

purchases induce additional rounds of local spending. Consequently, the university's total economic influence is some multiple of the level of direct spending. The 1976 study developed a model that estimated the Georgia State University spending multiplier to be 1.48. Thus, each dollar of initial university spending induces an additional forty-eight cents of income in the Atlanta metropolitan area.

Purpose

The purpose of the present study is to give interested members of the Atlanta community an up-to-date picture of the substantial extra dividend of jobs and income which Georgia State University provides.

In the ensuing two years since the initial economic impact study appeared, substantial growth has occurred in the dollar amounts which Georgia State University distributes to Atlanta for educational and general expenditures. This flow of funds takes the form of payrolls and material purchases.

During the same period, the dollar amount spent by students has also increased. The growth in student expenditures has occurred despite a leveling off in growth of the number of students. This growth reflects a rise in consumer prices since the initial economic impact study was conducted.

Plan of the Study

Although the changes in the dollar amounts of the income streams emanating from Georgia State University during the past two years are substantial, there has not been a significant change in the

economic structure of the Atlanta metropolitan area in so short a period of time.

This means that the proportion of initial expenditures remaining in the area to generate additional local income remains about the same as it was in 1976. Consequently, the present study need not recalculate the multiplier value of 1.48 used in the initial economic impact study. The present study updates the earlier study to reflect the changes brought about by recent price level inflation.

The study first presents a summary review of various university economic impact studies and includes the most recent addition to the literature pertaining to the Atlanta metropolitan area.

The study then reviews changes in the components of the student and the faculty/staff populations at Georgia State University and assesses the adequacy of previous spending survey findings to estimate current spending levels of these same populations.

Finally, the study uses the current population and spending figures to estimate the present dollar impact of Georgia State University in the Atlanta area economy.

Previous Impact Studies

Economic impact studies of colleges and universities first appeared in the mid-1960's. Table 1 summarizes the contributions of fourteen representative studies published from 1964 to 1978.

All of the studies estimate the demand for goods and services in the community resulting directly from expenditures by the university and its faculty and students. The Husson College Study (Vizard, 1967), though, was the first to use economic analysis to measure the secondary

Table 1

Summary Characteristics of Previous Impact Studies

Institution and year	Major contribution	Major shortcoming	Use of Multiplier
University of Bridgeport (1964)	Recognizes the "export" nature of college services	Considers only direct expenditures of university	No
Northern Michigan (1965)	Disaggregates university spending by types of goods	Considers only direct expenditures of university	No
Husson College (1967)	Makes first use of multiplier to estimate induced spending	Derivation of multiplier is not specific	Yes (2.0)
University of Colorado (1968)	Considers input/output analysis but rejects it as too costly	Ignores induced effects of student spending	Yes (1.37)
University of Connecticut (1969)	Recognizes cyclical stability of university employment	Includes no report of survey results	No
University of Florida (1970)	Justifies all university employment as basic	Basic employee equivalents of student spending are biased upward	Yes (1.4)
Wisconsin State University (1970)	Estimates future impact based on enrollment projections	Derivation of multiplier is not specific	Yes (2.0-2.3)
University of Alabama (1971)	Illustrates upward bias of aggregate employment multipliers	Produces unusually high multiplier resulting from aggregate approach	Yes (4.35)
Idaho State University (1971)	Makes first attempt to disaggregate student spending	Sample design leads to considerable bias	No
Eastern Kentucky University (1971)	Makes first use of student spending diaries	Derivation of multiplier is not specific	Yes (1.75)
University of Pittsburgh (1972)	Uses comprehensive data collection	There is no independent estimate of multiplier	Yes (2.0)
Kent State University (1973)	Uses specific calculation of university sector multiplier	Assumes university multiplier and service sector multiplier are same	Yes (1.09)
Georgia State University (1976)	Uses specific calculation of alternative multiplier models	Does not consider negative tax impact or positive human capital impact	Yes (1.48)
Georgia Institute of Technology (1978)	Estimates contribution of graduates and publications as well as economic impact	Gross input/output multiplier overstates local impact	Yes (2.92)

spending induced by the university's initial direct spending. The concept introduced was economic base theory and the local multiplier.

The underlying idea of economic base theory is regional specialization. Great increases in productivity result when participants in the economy concentrate their efforts in specialized activities where they have natural or trained abilities.

Similarly, geographic areas often contribute to increased productivity through specialization. The specialization may result from some indigenous talent of the local population or from a local endowment of natural resources such as soil or minerals. Regional specialization also may be the result of a location that has particular relevance to a market area or that serves as a transportation center.

A community's economic base consists of these specialized activities that produce for a demand that exceeds local consumption (North, 1955; Tiebout, 1962). Such nonlocal demand may involve sales to firms located elsewhere or to customers visiting from somewhere else. A portion of this nonlocal income then makes its way as wages and purchases into local trade and service activity.

An initial difficulty with economic-based studies lies in the proper classification of basic (export) and service (support) industries. The University of Florida study (Cook, 1970) examined the argument that if only, say, eighty percent of the university's funds come from nonlocal sources, only eighty percent of the university's expenditures should be considered basic. Conversely, the study pointed out that if money spent by local residents for education would be spent elsewhere in the absence of the university, then local educational services

represent a decrease in the community's imports (import substitution). Thus, all local university spending and employment may be classified as basic.

The Idaho State University study (Kelly & Peterson, 1971) raised the question of correct sample design for the surveys needed to estimate the funds students and faculty spend locally. Wilson and Raymond (1973) suggest that a proportionate, stratified sample produces a less biased estimate of the population's spending than other methods.

Developing accurate estimates of university-related direct spending, however, did not complete the picture of the influence on local economic activity. These initial purchases induce additional rounds of spending. Consequently, the university's total economic impact is some multiple of university-related initial spending.

Economic impact studies have usually presented the same conceptual basis of the community income multiplier, but they rarely presented an actual calculation of the multiplier value subsequently used. The value was usually taken from some more general study of trade areas of similar size. This lack of precision in estimating the multiplier value often compromised the considerable effort expended to measure accurately the amount of direct university-related spending. Some studies calculated multiplier values as high as 4.35 in contrast with the 1.20 to 1.50 range recommended for university economic impact studies by the American Council on Education (Caffrey & Isaacs, 1971).

The Georgia State University economic impact study (Salley, 1973) was one of the first to calculate a multiplier value specifically for

the local community involved. The actual value of 1.48 for Atlanta spending falls within the recommended American Council on Education range.

The initial Georgia State University impact study led to an additional study which translated the multiplier formula into a step-wise calculation procedure that enables researchers to arrive at a reliable economic estimate without spending many weeks viewing the regional science literature (Salley, 1978). This multiplier calculation avoids both the oversimplified structure of aggregate location quotient models and the massive data requirements of input-output models.[1]

The most recent analysis of an educational institution's impact on Atlanta is the Georgia Institute of Technology impact study (Schaffer & Biven, 1978). This study makes use of an input-output model developed for the State of Georgia in 1970. The model is used to trace the impact in the state economy which out-of-state funds associated with Georgia Institute of Technology have. The multiplier for the Atlanta area for all funds' expenditures attributable to Georgia Institute of Technology was calculated to be 2.92.

Student and Faculty/Staff Spending

The initial Georgia State University impact study conducted in 1976 found that each year students spend $6,455 on average in Atlanta and that faculty/staff members each spend $8,419 on average. These amounts are averages of survey findings weighted by the composition of each population. If the composition of each population has not changed,

the weighted averages are still accurate estimates of spending levels and need only be adjusted for price level increases that have occurred since the surveys were made. Table 2 compares the population stratifications for 1976 and 1978.

Table 2

Georgia State University
Population Stratifications
1976 and 1978

Stratifications	Spring Quarter, 1976		Spring Quarter, 1978	
	Number	Percent	Number	Percent
	Student Population			
Freshmen	2,736	14.3	2,733	14.2
Sophomore	2,399	12.6	2,610	13.6
Junior	2,930	15.3	2,871	14.9
Senior	3,692	19.3	4,108	21.3
Graduate	7,335	38.5	6,923	36.0
Total	19,092	100.0	19,245	100.0
	Full-Time Faculty/Staff Population			
Faculty	791	41.8	816	38.7
Staff	1,102	58.2	1,290	61.3
Total	1,893	100.0	2,106	100.0

SOURCE: University System of Georgia Quarterly Enrollment Report.
Personnel Services Data, October 1978.

Since there have been no major shifts in the population stratifications, the original student and faculty/staff estimates can be updated simply by adjusting for price level changes. This can be done by using the price index published regularly in the Federal Reserve Bulletin.

Table 3

Student and Faculty Spending
Adjusted for Inflation

Average Student Spending	Average Faculty/Staff Spending
$\$6,455 \times \frac{193.0 \text{ (1978 index)}}{170.5 \text{ (1976 index)}}$	$\$8,419 \times \frac{193.0 \text{ (1978 index)}}{170.5 \text{ (1976 index)}}$
= $7,307	= $9,530

Georgia State University's Spending Impact

The university's initial spending impact comes from three sources: local purchases by the university, local faculty/staff spending of the university payroll, and local spending by students whose activity in Atlanta is directly attributable to their enrollment at Georgia State University.

Local general funds purchases during Fiscal 1978 totaled $9,967,085. This amount was the total of virtually all purchases since the university is located in the regional wholesale supply center and very few purchases are made outside the area. Purely nonlocal initial purchases were limited to periodical subscriptions and some travel expenses.

The annual local spending by faculty and staff for 1978 is estimated to be an average of $9,530. Total local spending by 2,106 full-time employees is, then, $20,070,180. There are an additional 1,522 part-time employees. Although their spending patterns are similar to

those of full-time employees, their local purchases cannot be attributed entirely to the university as payroll records indicate that only $4,528,148 was paid out to part-time personnel. Most of their income, apparently, derives from other sources.

Annual local spending by students during 1978 is estimated to be $7,307 on average. Since many students are professionally employed in Atlanta and are incidentally enrolled in Georgia State University on a part-time basis, all student spending is not directly attributable to the university. The initial study ascertained that forty-six percent of the student body are living in Atlanta because of their enrollment in Georgia State University. Either they have moved to the area to attend this school, or they would have moved elsewhere to attend school if Georgia State University were not located in the Atlanta area. A total of 8,853 students fall in this category. Their spending is $64,688,871.

Total initial university spending from these three sources amounts to $94,726,136. The figure is conservative because it omits spending by part-time employees and most part-time students. To obtain the total local expenditure figure, this amount is increased by the local multiplier:

$$(1.48) \times 94,726,136 = 140,194,681.$$

Figure 1 summarizes these findings.

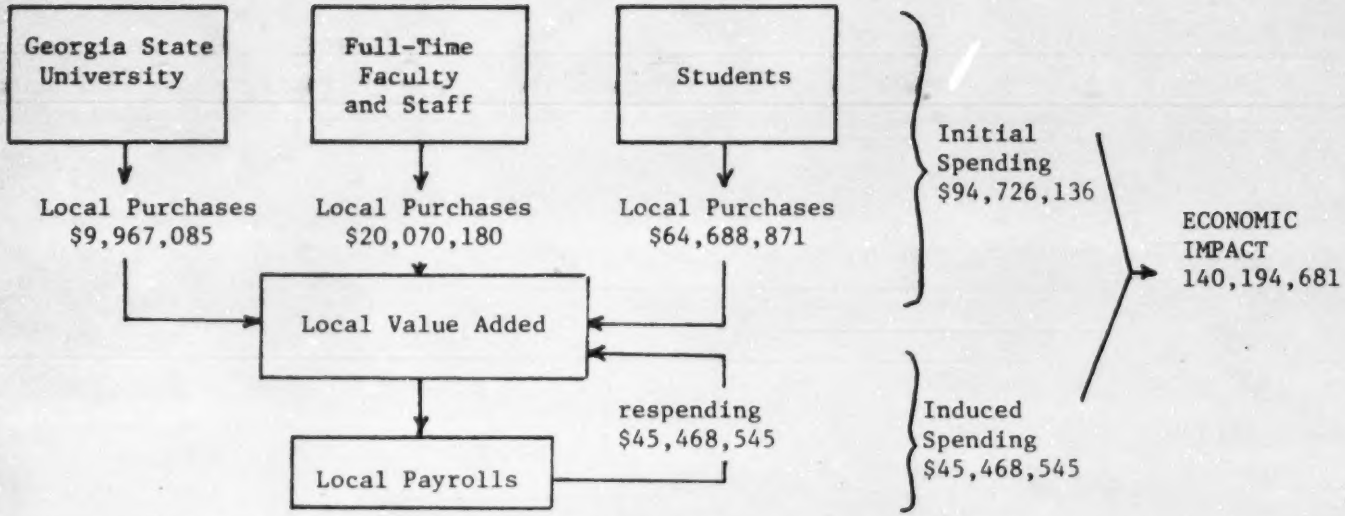

Figure 1. Atlanta Spending Patterns.

Total local employment is estimated similarly. Initial employment is 3,670, consisting of the 2,106 full-time employees plus the 1,564 initial full-time jobs attributable to student spending. (Salley, 1976, Appendices F-1 and F-2). To obtain the total employment impact figure, this level is increased by the local multiplier. Using the estimator, 1.48, a total of at least 5,432 jobs in the Atlanta area may be attributed to Georgia State University.

Summary

During the 1960s and early 1970s, economic impact studies became the vehicle to promote the positive attributes of nonprofit institutions for their local areas. Postsecondary educational institutions were prominent among these. A series of studies appeared calling attention to the substantial dividend of jobs and incomes a university provides its local community in the course of pursuing its primary educational and cultural aims.

Succeeding studies resolved several conceptual problems, one dealing with the manner in which university-related spending enters the income stream and another dealing with the multiplier calculation used to estimate the additional income generated by these initial expenditures.

The initial Georgia State University economic impact study calculated a multiplier value for Atlanta of 1.48. This value is within the 1.20-1.50 range that the American Council on Education recommends for university economic impact studies.

The present study found that direct university-related spending for 1978 totaled $94,726,136. Since this figure omits spending by part-time employees and most part-time students, the use of the 1.48

multiplier produces a reliable, in the sense of minimum, estimate of total spending impact on the 15-county Atlanta area. This figure is $140,194,681.

The same multiplier, together with the calculation of employee equivalents of student spending, attributes a total of 5,432 jobs to Georgia State University's spending. Again, any error in the estimates of both the expenditure impact and employment impact is on the conservative side.

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Footnotes

[1]This study illustrates the use of a differential value-added multiplier model. As the name indicates, two different multipliers come into play--an initial local spending ratio unique for university patterns and a second ratio for subsequent rounds of local respending by consumers.

The limiting case of this type of disaggregation is the input-output model which uses separate spending ratios for every sector of the local economy. The Georgia State University model represents a happy medium by recognizing that, while the initial spending impact of a university may differ substantially from the initial impact of, say, an automobile assembly plant, the induced respending by various local consumers may be more similar and, thus, more reliably aggregated.